CG Docket № 16-145 – GN Docket № 15-178

Before the Federal Communications Commission

In re

Transition from TTY to Real-Time Text Technology
&
Petition for Rulemaking
To Update the Commission's Rules For Access
To Support the Transition
From TTY to Real-Time Text Technology,
And Petition for Waiver
Of Rules Requiring Support of TTY Technology

ON NOTICE OF PROPOSED RULEMAKING

COMMENTS OF THE NATIONAL EMERGENCY NUMBER ASSOCIATION

Telford E. Forgety, III
Government Affairs Director

1700 Diagonal Road, Ste. 500
Alexandria, VA 22314
(202) 618-6369

CONTENTS

Before the Federal Communications Commission

CG Docket № 16-145 – GN Docket № 15-178

In re

Transition from TTY to Real-Time Text Technology
&
Petition for Rulemaking
To Update the Commission's Rules For Access
To Support the Transition
From TTY to Real-Time Text Technology,
And Petition for Waiver
Of Rules Requiring Support of TTY Technology

ON NOTICE OF PROPOSED RULEMAKING

COMMENTS OF THE NATIONAL EMERGENCY NUMBER ASSOCIATION

NENA: The 9-1-1 Association respectfully submits the following comments in response to the *Notice of Proposed Rulemaking* adopted by the Commission on April 28th, 2016, in the above-captioned proceeding.

COMMENTS

NENA is exceptionally pleased that the Commission initiated this proceeding. The real-time text ("RTT") transition is a welcome step along the path to universal Next Generation 9-1-1. Indeed, NENA is convinced that this transition will provide enormous benefits, both to 9-1-1 professionals, and to the public they serve. RTT will, for example, improve significantly on the capabilities of the

interim SMS text solution by increasing the speed of interactions, introducing a more conversational flow, expanding language support, and equalizing the location capabilities of text-based 9-1-1 calls. Moreover, the nearly-instantaneous nature of RTT character streams could enable significant operational efficiencies for Public Safety Answering Points ("PSAPs"). In one (very realistic scenario), RTT could soon allow PSAPs to employ predictive text analysis software to quickly narrow-down a set of canned, protocol-based responses as a caller is typing. By suggesting more likely responses (and even learning from subsequent telecommunicator choices), such software could significantly reduce time-to-dispatch for text calls, while simultaneously improving the protocol compliance and data accuracy. The importance of these improvements cannot be overstated. Particularly for consumers who are deaf, hard of hearing, speech-impaired, or deaf-blind, these features can literally mean the difference between life and death.

Because we believe that the Commission's proposals will accelerate the RTT transition, and guide it to a successful conclusion, NENA urges the Commission to move expeditiously to implement them.

I. RTT is the right technology at the right time.

As the primary standards body for 9-1-1, NENA is proud of our Development Group's long history of support for technologies like RTT. Their work helps make emergency telecommunications services accessible for individuals with disabilities in a variety of ways. For Next Generation 9-1-1, those efforts include designing-in robust support for access technologies. Two factors drive our conviction that the time is right for the Commission to update its rules and begin the RTT transition in earnest: First, there is a broad base of support for core NG9-1-1 standards like i3, which includes explicit support for RTT service via technical means consistent with the Commission's proposals and the recent commitments made by

AT&T[1] and Verizon[2] in connection with their petitions for waivers. Second, there is growing frustration among both PSAPs and consumers[3] that 9-1-1 service cannot currently meet what have become basic consumer expectations for service functionality. Everyone, it seems, is ready for this transition to begin in earnest.

II. Flexible text service, including RTT, is a core feature of NG9-1-1.

The i3 Standard supports RTT natively using the RFC 4103 protocol "RTP Payload for Text Conversation."[4] Consequently, NENA strongly supports the Commission's proposal to establish RFC 4103 compliance as a safe harbor for basic service and interoperability requirements.

Perhaps more importantly, however, the standard also includes support for many of the additional features that the Commission discusses in its Notice.[5] For example, support for multiple simultaneous media streams of differing types is one aspect of the standard.[6] This support is critical for captioned telephone service, Voice Carry Over, and Hearing Carry Over, and enables tele-

---

[1] *In re Petition for Waiver of Rules Requiring Support of TTY Technology*, Order, 30 FCC Rec'd 10,855 (CGB PSHSB WTB WCB 2015) (AT&T TTY-RTT Transition Waiver Order).

[2] *In re Petition for Waiver of Rules Requiring Support of TTY Technology*, Order, 30 FCC Rec'd 12,755 (CGB PSHSB WTB WCB 2015) (Verizon TTY-RTT Transition Waiver Order).

[3] Consumer Groups, *Reply to Comments* at 3 (GN Docket 15-178, CG Docket 16-145) (Sept. 9, 2015).

[4] *See generally* NENA: The 9-1-1 Association, "Detailed Functional and Interface Specification for the NENA i3 Solution," (*available at* https://www.nena.org/?page=i3_Stage3) (last accessed July 11, 2016).

[5] *Id.*

[6] *Id.* at 56.

communicators to see the same video that a Communication Assistant ("CA") sees during a video relay call, while hearing the relayed speech.[7] These features remove some of the drawbacks to relay service, by offering telecommunicators direct audibility and/or visibility of the caller, with a CA acting only as an additional, facilitating party. Additionally, they can ensure that caller location information is not lost when a CA or interpreter is employed. Deployment of these advanced services in IP origination networks may require additional time and implementation work, however, to ensure, e.g., that text and video remain synchronized. But, Originating Service Providers can be confident that, once these technical challenges are surmounted, NG9-1-1 systems will be prepared to handle them (at least from a technical standpoint).

III. The Commission should carefully consider the potential operational and competition impacts of certain RTT requirements.

As a first principle, NENA believes that RTT service requirements should be consistent for all similarly situated Originating Service Providers. We recognize, however, that implementation challenges are likely to differ between regulated entities that are Originating Service Providers ("OSPs"), only, and those that are both Access Network Providers ("ANPs") *and* OSPs. More importantly for our members, however, we are compelled to highlight potential operational limitations that consumers and PSAPs could face if the RTT roll-out is not carefully coordinated with as-yet unresolved issues relating to the broader NG9-1-1 transition.

For example, the Notice rightly observes that the location accuracy requirements applicable to Commercial Mobile Radio Service ("CMRS") providers in the voice

---

[7] FCC, "Telecommunications Relay Service," (*available at* https://www.fcc.gov/consumers/guides/telecommunications-relay-service-trs) (last accessed July 11, 2016).

realm must apply equally to RTT.[8] The Notice also contemplates that at least some RTT service could be provided via "over-the-top" applications, even when the service obligation falls on an integrated ANP/OSP.[9] NENA shares this view. How a disaggregated OSP or an over-the-top originating RTT app provided by an ANP under contract with a third party could meet this obligation, today, however, is unclear. In the E9-1-1 environment, for example, NENA is unaware of any capability that would allow an app to trigger an ANPs position determining equipment to locate the caller and populate an Automatic Location Identification record. Moreover, in an NG9-1-1 environment, NENA is unaware of any Location Information Servers being deployed in a production access network for internal use, let alone for use by third parties. Who must provide these critical services, and under what terms, must be resolved before native NG9-1-1 services, like RTT, can become widespread (and competitive). Otherwise, PSAPs could be forced to continue relying on less-accurate location information such as the cell-sector centroid supplied with SMS messages today.[10] To repeat the limitations of that interim platform would be a tragedy. Moreover, it would deprive millions of consumers the equality of access to emergency communications

---

[8] *In re Transition from TTY to Real-Time Text Technology, and Petition for Waiver of Rules Requiring Support of TTY Technology*, Notice of Proposed Rulemaking at 34, (FCC 16-53, CG Docket No. 16-145, GN Docket No. 15-178) (Apr. 29, 2016) (NPRM), (*available at* https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-53A1.pdf) (last accessed July 11, 2016).

[9] *Id.* at 18.

[10] NENA: The 9-1-1 Association, "Interim SMS Text-to9-1-1 Information and Planning Guide," (*available at* https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/standards/faq_for_interim_text-to-9-1-.pdf) (last accessed July 11, 2016).

services that the law requires, and that the 9-1-1 community very much wishes to provide.

IV. The confidentiality, integrity, and availability RTT 9-1-1 service should be paramount.

Historically, communications security has been an exercise in physical segregation of facilities and obscurity of signaling protocols. That approach is ill-suited to today's threat environment. In recent months, NENA has heard increasing reports of cybersecurity incidents affecting PSAPs. As a result, we have significantly stepped-up our efforts to improve the preparedness of our nation's 9-1-1 centers to face today's cyber threats. Consistent with those efforts, we encourage the Commission to leverage the security features designed-in to the i3[11] and NG-SEC[12] standards as it implements the first (of what we hope to be many) new media transitions.

Consumers have a right to assume that their communications with 9-1-1 will not be unlawfully intercepted, modified, or blocked. To that end, the i3 standard includes mandatory support for Secure Real-Time Protocol ("SRTP") and Secure Real-Time Control Protocol.[13] Use of these authenticated, encrypted, integrity-assured versions of the non-secure protocols normally relied up to

---

[11] NENA: The 9-1-1 Association, "NENA i3 Solution – Stage 3," (*available at* https://www.nena.org/?page=i3_Stage3) (last accessed July 11, 2016).

[12] NENA: The 9-1-1 Association, "Security for Next-Generation 9-1-1," (*available at* https://www.nena.org/?page=NG911_Security) (last accessed July 11, 2016).

[13] NENA: The 9-1-1 Association, "Understanding NENA's i3 Architectural Standard for NG9-1-1," 57 (*available at* https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/Standards/08-003_Detailed_Functional_a.pdf) (last accessed July 11, 2016).

handle RTT media is mandatory within Emergency Services IP networks ("ESInet").[14] ESInets are additionally required, however, to support the use of secure protocols between their own borders and those of serving OSPs.[15] NENA believes that the use of these secure protocols should be mandatory for OSPs, too. Such a requirement will help to ensure that consumers' (eminently reasonable) expectations with respect to the security of their most important communications are met. Further, such a requirement would assist 9-1-1 authorities in detecting potentially malicious traffic offered to ESInets, and law enforcement agencies in attributing attempted intrusions to identifiable suspects. Because we are convinced that these benefits significantly outweigh the minimal additional costs that originating service providers are likely to incur in providing service via secure protocols, NENA strongly urges the Commission to impose such a requirement now.

V. Legacy PSAPs can be adequately supported via gateway functions.

NENA is heartened by voluntary commitments that the waiver carriers have made to support E9-1-1 service for RTT users via carrier-provisioned gateways.[16] Although we intend to work vigorously to ensure that such gateways do not become persistent features of NG9-1-1-compatible services, the reality of many state and local budgets militates in favor of a cautionary view. It is possible that carrier gateways could remain necessary for five years or more, in some cases. Provided these gateways provide PSAPs with the long-established functions of

---

[14] *Id.*

[15] *Id.* at 43.

[16] *E.g.*, Petition of AT&T Services, Inc. for Waiver, (PS Docket Nos. 10-255 and 11-153, WC Docket No. 04-36, CG Docket Nos. 03-123 and 10-213) (June 12, 2015) (AT&T Petition for Waiver).

E9-1-1 voice and TTY systems, however, NENA believes they are an adequate means of supporting the RTT transition.

To be clear, carrier RTT to TTY gateways must provide each of the following components of an E9-1-1 TTY call to provide equal service to consumers:

i. Delivery via the relevant Selective Router;
ii. TTY (baudot) media;
iii. Automatic Number Identification (that permits a TTY call-back of the party who initiated a 9-1-1 call); and
iv. Automatic Location Identification (meeting the existing indoor/outdoor requirements and supporting re-bids).

Without these features, local 9-1-1 authorities and PSAPs will be unable to provide equivalent access to emergency communications services for consumers using RTT.

VI. The Commission should take care to protect 9-1-1 service and consumers during a short phase-out period for TTY, beginning soon.

Much as the Commission was required to manage through broadcaster and viewer challenges during the DTV transition, it will be critically important that the Commission do so through this transition as well. PSAPs will require significant time, testing, and coordination in order to ensure that the new capabilities offered by RTT service can be met both technically *and* operationally. NENA is confident that they can, particularly in light of the success PSAPs have enjoyed during the still-nascent SMS-to-9-1-1 roll-out. Nevertheless, any change-management process of this magnitude will encounter significant, and often unexpected, human factors that may alter initial expectations for deployment. For example, although NENA supports the use of standardized transliterations for non-ASCII characters delivered to TTY-only PSAPs during the transition, we expect that PSAPs will face a significant learning process as these new character

types are introduced. Consequently, it is likely that a continuous feedback loop will be required to adjust standardized transliterations for operational efficiency. Establishing a process, early on, by which transliterations can be standardized and rapidly updated based on PSAP and consumer feedback will be crucial.[17] Other human factors will doubtless emerge, and NENA hopes that a collaborative process with carriers, consumers, and public safety professionals can quickly develop mitigations. However, we encourage the Commission to ensure that PSAPs retain adequate flexibility to address these concerns in ways that protect the core operational responsibilities of those centers with respect to established media types.

NENA is particularly pleased that the Commission identifies the NG9-1-1 Coalition's aggressive but achievable goal of seeing NG9-1-1 service available to all PSAPs by year-end 2020.[18] The Coalition proposal reflects a strong consensus among 9-1-1 professionals, state administrators, and industry that the NG9-1-1 transition, and all of the benefits it can bring to consumers and PSAPs alike, must begin in earnest. In order for that consensus vision to be realized, the Commission should move swiftly to enable the transition by, *inter alia*, beginning the RTT transition. With diligent effort on the part of 9-1-1 authorities, states, and the federal government, RTT could become a nation-wide reality sooner, rather than later.

Beyond the PSAPs themselves, consumers, too, must be prepared for this change. As the Commission notes,

---

[17] From a technical perspective, standardizing transliterations could allow carrier gateways and PSAP software to effectively conceal the underlying limitations of the TTY protocol from both consumers and telecommunicators, albeit at the cost of introducing some additional character latency. To do otherwise would force consumers to revert to an unfamiliar mode of operation at a time of great stress, and arguably detracts from equality of access.

[18] *NPRM* at 33.

TTY usage is widely thought to be declining precipitously.[19] Indeed, it appears never to have taken hold in the wireless space at all.[20] Nevertheless, for some subset of TTY users, transitioning to more advanced, and thus more complicated, devices may be difficult. Access to affordable, easy-to use IP-enabled services will be crucial for consumers in all age brackets, of all technical sophistications, and in all parts of the country. NENA has a long track record of working with consumer interest groups, through our Accessibility Committee, to ensure that 9-1-1 service is accessible to individuals with disabilities. Similarly, our Public Education and PSAP Training Committee has extensive experience designing public education materials related to new 9-1-1 services. For example, we worked closely with carriers in designing harmonized "bounce back" messages before SMS-to-9-1-1 became a reality.[21] Jointly, we believe that these assets can significantly aid in the necessary public education efforts required to make the RTT transition a success, and we commit to taking full advantage of their expertise. To effect the final transition to a TTY-free world, however, it may be necessary for the Commission to undertake ef-

---

[19] *In re Transition from TTY to Real-Time Text Technology, and Petition for Waiver of Rules Requiring Support of TTY Technology*, Notice of Proposed Rulemaking, (FCC 16-53, CG Docket No. 16-145, GN Docket No. 15-178 at 9) (Apr. 29, 2016) (NPRM), (*available at* https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-53A1.pdf) (last accessed July 11, 2016).

[20] EAAC, *TTY Transition Report* at 12, *(available at* https://www.fcc.gov/document/emergency-access-advisory-committee-eaac-report-tty-transition) (last accessed July 11, 2016).

[21] NENA: The 9-1-1 Association, "'Big 4' Wireless Carriers will deploy Text-to-9-1-1 Capabilities on Their Networks in 2014," (*available at* http://www.nena.org/news/110797/) (last accessed July 11, 2016).

forts similar to those used in the Digital Television transition, in order to ensure that *all* consumers retain effective access to 9-1-1 capable communications equipment and services.

CONCLUSION

The Commission should begin, and complete, the RTT transition quickly, and with an eye toward improving the ability of local 9-1-1 centers to serve their stakeholders who rely on text for the majority of their communications.

TELFORD E. FORGETY, III
Attorney